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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/713,580	11/15/2000	Domingo G. Garcia	TI-28900	3001

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EXAMINER

NGUYEN, DUNG X.

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 11/06/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/713,580

Applicant(s)

GARCIA, DOMINGO G.

Examiner

Dung X Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 - 10 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Drawing Objection(s)

1. Figures 1 and 2 are objected and should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Appropriate correction is required.

Specification Objection(s)

2. On page 13, line 24, "Alternativt" should be changed to --Alternatively--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 3 – 10 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Uchiyama (US patent # 5,228,060).

Regarding claim 1, Uchiyama discloses (figure 1 and its description on column 4, line 16 to column 6, line 55):

- Units 6 – 15 act as a tracking buffer for tracking a plurality of coefficients for timing drift (column 4, lines 41 – 49 and column 5, lines 26 – 67);

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- Centering the plurality of coefficients in the equalizer 5 (column 5, line 67 to column 6, line 15);
- Filtering the signal with the plurality of coefficients through an equalizer 5 (column 5, lines 26 – 35); and
- Updating the plurality of coefficients in the equalizer 5 (column 1, lines 28 – 32 and column 5, lines 36 – 39).

Uchiyama differs from the instant claimed invention that it does not state that to update and to center the plurality of coefficients in the tracking buffer instead of the equalizer 5. However, Uchiyama discloses that the coefficients center and update in equalizer 5, and then store to buffers 15, 9, and 10 (column 6, lines 16 – 38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Uchiyama to provide to update and to center the plurality of coefficients in the tracking buffer instead of the equalizer 5 for a designed choice because storing the coefficients centered and updated in equalizer or in buffers has the same meaning.

Regarding claim 3, Uchiyama discloses (figure 1 and its description on column 4, line 16 to column 6, line 55):

- QAM demodulator 3 for receiving input signal $r(t)$;
- Units 6 – 15 act as a tracking buffer for tracking a plurality of coefficients for timing drift (column 4, lines 41 – 49 and column 5, lines 26 – 67);
- Centering the plurality of coefficients in the equalizer 5 (column 5, line 67 to column 6, line 15);
- Filtering the signal with the plurality of coefficients through an equalizer 5 (column 5, lines 26 – 35); and
- Updating the plurality of coefficients in the equalizer 5 (column 1, lines 28 – 32 and column 5, lines 36 – 39).

Uchiyama differs from the instant claimed invention that it does not show the step of splitting the input signal $r(t)$ into an in-phase and a quadrature-phase signals. However,

Uchiyama discloses that the QAM demodulator 3 demodulates the received signal (column 4, lines 29 - 31), as a QAM demodulator, it separates the signal into an in-phase (I) and a quadrature-phase (Q) signals and acts as a splitting step, thereby the needed components will be followed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Uchiyama to provide QAM demodulator as a step of splitting and thereby to update and to center the plurality of coefficients in the tracking buffer instead of the equalizer as analyzed in claim 1 for functioning the QAM demodulator 3.

Regarding claim 4, the limitation is analyzed in the same manner set forth as claim 3.

Regarding claim 5, Uchiyama discloses (figure 1 and its description on column 4, line 16 to column 6, line 55):

- Equalizer 5 for processing signal;
- Buffers 15, 9, and 10 for storing a plurality of equalizer coefficients to be applied to the equalizer 5 (column 5, line 26 to column 6, line 38);
- Buffer manager 8 for tracking the equalizer coefficients within the buffers 15, 9, and 10 (column 4, lines 44 - 49 and column 6, lines 16 - 55), and for shifting the coefficients such that the coefficients remain centered within the equalizer (column 5, line 67 to column 6, line 38).

Uchiyama differs from the instant claimed invention that it does not state that to shift the plurality of coefficients such that the coefficients remain centered in the tracking buffer instead of the equalizer 5. However, Uchiyama discloses that the controller 8 stores coefficients updated or centered in equalizer 5 to buffers 15, 9, and 10 (column 6, lines 16 - 38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Uchiyama to provide to shift the plurality of coefficients such that the coefficients to center in the buffers instead of the equalizer 5 for a designed choice because storing the coefficients centered and updated in equalizer or in buffers has the same meaning.

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Regarding claim 6, Uchiyama further discloses (figure 1 and its description on column 4, line 16 to column 6, line 55):

- Buffers 15, 9, and 10 for storing portions of signal and equalizer coefficients (column 6, lines 20 – 49).

Regarding claim 7, Uchiyama differs from the instant claimed invention that it does not show that buffers 15, 9, and 10 for pointing to the portion of signal and the equalizer coefficients. However, as memories, they have to point to whatever stored in them (see Grimwood et al., figure 8 and column 27, lines 5 – 20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to recognized Uchiyama to provide buffers 15, 9, and 10 to point to the portion of signal and the equalizer coefficients for process the memory's functions.

Regarding claim 8, Uchiyama discloses (figure 1 and its description on column 4, line 16 to column 6, line 55):

- QAM demodulator 3 for receiving input signal $r(t)$;
- Equalizer 5 for processing portions of the signal;
- Buffers 15, 9, and 10 act as a tracking buffer for storing a plurality of equalizer coefficients to be applied to equalizer 5 (column 5, line 46 to column 6, line 49);
- Units 7, 8 act as a buffer manager.

Uchiyama differs from the instant claimed invention that it does not show the step of splitting the input signal $r(t)$ into an in-phase and a quadrature-phase signals. However, Uchiyama discloses that the QAM demodulator 3 demodulates the received signal (column 4, lines 29 - 31), as a QAM demodulator, it separates the signal into an in-phase (I) and a quadrature-phase (Q) signals and acts as a splitting step, the needed components will be followed thereby. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Uchiyama to provide QAM demodulator as a step of splitting and thereby to store plurality of coefficients in the tracking buffers 15, 9, and 10 for process the functions of the QAM demodulator 3.

Regarding claim 9, Uchiyama differs from the instant claimed invention that it does not show the steps of functioning the buffer manager for tracking the equalizer coefficients within the tracking buffers, for shifting the coefficients within the buffers such that the coefficients remain centered within the tracking buffers. However, Uchiyama discloses that the buffer manager 8 for tracking the equalizer coefficients within the equalizer 15, 9, and 10 (column 5, line 46 to column 6, line 49), shifting the coefficients such that the coefficients remain centered within the equalizer (column 5, line 67 to column 6, line 38, and QAM demodulator 3 demodulates the received signal (column 4, lines 29 - 31). As a QAM demodulator, it separates the signal into an in-phase (I) and a quadrature-phase (Q) signals and thereby the needed components will be followed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Uchiyama to provide the steps of functioning the buffer manager for tracking the equalizer coefficients within the tracking buffers, for shifting the coefficients within the buffers such that the coefficients remain centered within the tracking buffers for process the functions of the QAM demodulator 3.

Regarding claim 10, the limitations are analyzed in the same manner set for as claim 9.

Allowable Subject Matter

5. **Claim 2 is objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Werner et al. (US patent # 6,252,903 B1) discloses a blind start-up of a dual mode CAP-QAM receiver.

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Grimwood et al. (US patent # 6,243,369B1) discloses an apparatus and its corresponding method for synchronizing an SCDMA or any other type upstream to downstream or any other type downstream with a different clock rate than the upstream.

Knutson et al. (US patent # 5,930,309) discloses a receiver signal processing system for CAP signals.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax phone numbers for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN

October 31, 2003


MOHAMMAD H. GHAYOUR
PRIMARY EXAMINER